

Stata code and brief descriptions

Opening up the ‘Black Box’ of Audit Firms: The Effects of Audit Partner Ownership on Audit Adjustments

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****Section 1: Global setups**

```
global dir0 D:\research\temp\EQR
global dir1 D:\research\rawdata\audit
global dir2 D:\research\rawdata\auditor
global dir3 D:\research\rawdata\unique_var
global dir4 D:\temp\result
global dir5 D:\research\rawdata\financial
global dir6 D:\research\rawdata\audit_firm
global dir7 D:\research\rawdata\corpgovn
global dir8 D:\research\rawdata\ic
```

```
global out outreg2 using
global basic excel stats(coef tstat) aster(tstat) bdec(3) tdec(2)
global add addstat(Model F-stat,e(F), p-value, e(p),Adj_R2,e(r2_a))
global add0 addstat(Model Chi-square,e(chi2),Pseudo_R2,e(r2_p))
```

```
global dep0 lnadjmag_w
global dep1 adjmag_r
global exp0 lneqrshare lnaud1share lnaud2share
global exp1 lneqrshare lnaudshare
global exp0r lneqrshare_r lnaud1share_r lnaud2share_r
global exp1r lneqrshare_r lnaudshare_r
global ctrl1 lta lev roa lnsubs pre_acc soe boardsize inddirp dual dicw ften ci_o
cpaexp_eqr cpaexp1 cpaexp2 port_eqr port_aud1 port_aud2 revonly dcosign prior_audit
expdiff ptenddiff
global ctrl0 lta lev_w roa_w lnsubs pre_acc_w soe boardsize inddirp dual dicw ften ci_o
cpaexp_eqr cpaexp1 cpaexp2 port_eqr port_aud1 port_aud2 revonly dcosign prior_audit
expdiff ptenddiff
global ctrl1 lta lev_w roa_w lnsubs pre_acc_w soe boardsize inddirp dual dicw ften ci_o
cpaexp_eqr cpaexp_eng port_eqr port_eng revonly dcosign prior_audit expdiff ptenddiff
global ctrl_age age_eqr age1 age2
global ctrl_gend female_eqr female1 female2
global ctrl_edu abvbach_eqr abvbach1 abvbach2
global misslist lta lev roa lnsubs pre_acc soe boardsize inddirp dual dicw ften ci_o
cpaexp_eqr cpaexp1 cpaexp2
global fe i.yr i.audfirm_id
```

```
global samp_full yr>=2013 & yr<=2015 & listage>=0 & eqrcode!=audcode1 &
eqrcode!=audcode2 & diff_tp<=0.01 & miss==0
global samp_fe yr>=2013 & yr<=2015 & listage>=0 & eqrcode!=audcode1 &
eqrcode!=audcode2 & diff_tp<=0.01 & miss==0 & totn!=1
```

**Section 2: Converting raw data to the final dataset for empirical analyses

*** Preparation before merging the proprietary raw data on engagement quality (EQ) reviewers

// Step 1.1

// The CSRC raw data on EQ reviewers (titled as "audit_EQR.xls") provide systematic information on the name of EQ reviewer (with the variable name "eqr") for each listed Chinese company since 2013.

// The listed company in the CSRC raw data appears in its full name (as the identifier, with the variable name "fullname") rather than the stock code. To facilitate subsequent data treatment and empirical analyses, one job is to match each company with its stock code. We obtain the full name database from the CSMAR, where each full name of a listed company has a corresponding stock code (with the variable name "code").

// For full names that cannot be matched through the program, we conducted a manual check and hand collected them.

** match a company's stock code with its full name

cd \$dir1

import excel using audit_EQR.xls, first clear

destring yr, replace

keep if yr>=2013 & yr<=2015

keep if regexm(clienttype,"上市公司 A 股")

duplicates drop

cd \$dir0

preserve

cd \$dir5

import excel using fullname.xls, first clear

duplicates drop

cd \$dir0

save temp.dta,replace

restore

merge m:1 fullname using temp.dta

drop if _m==2

sort _m fullname

drop if _m==1

drop _m

sort code yr

save main.dta,replace

```

// Step 1.2
// The name of an EQ reviewer in the CSRC raw data appears in Chinese. Given the
// possibility of a duplicate name for different individual auditors, another job is to match
// each EQ reviewer with her/his unique certified public accountant (CPA) code.
// We obtain the CPA code for each individual auditor from the Ministry of Finance
// (MOF). We have maintained a database (titled as "audit_upto2015.xls") to store each
// company-year observation (code, yr) with the audit firm (with the variable name
// "audfirm"), the names of two signing auditors (with the variable name "auditor1" for the
// lead engagement partner, "auditor2" for the junior engagement partner, both are in
// Chinese) and their CPA code (with the variable names "audcode1" and "audcode2"),
// along with other proprietary data items from the MOF on pre-audit earnings and
// post-audit earnings, a few common CSMAR data items on total assets (with the variable
// name "ta"), audit opinions (with the variable name "op"), and CSRC 2012-version
// industry classifications (with the variable name "indu2012"), and manually identified
// data item on audit firm switching (with the variable name "fr").
// We firstly match EQ reviewers' names with the CPA code in our self-maintained
// database "audit_upto2015.xls".
// To make sure to properly handle the identities of EQ reviewers with a duplicate name,
// we conducted a manual check and hand collected them.

use main.dta,clear
keep eqr
duplicates drop
sort eqr
rename eqr auditor

preserve
cd $dir1
import excel using audit_upto2015.xls,first clear
keep code yr audcode* auditor*
reshape long audcode auditor, i(code yr) j(id)
keep audcode auditor
duplicates drop
drop if audcode==.
bysort auditor: egen dupname=count(audcode) // identify auditors with a duplicate
                                         name

cd $dir0
save temp.dta,replace
restore

append using temp.dta
gen eqr_d=1 if audcode==.
format audcode %14.0g
sort auditor audcode

```

```

replace audcode=audcode[_n-1] if audcode==. & auditor==auditor[_n-1] &
dupname[_n-1]==1
gen eqr_nph=1 if eqr_d==1 & auditor!=auditor[_n-1] // identify EQ reviewers without
prior history in the self-maintained database

tab eqr_nph
gen tbd=1 if audcode==. & auditor==auditor[_n-1] & dupname[_n-1]>1 &
dupname[_n-1]!/. // identify observations with duplicate names for manual checking
tab tbd

keep if eqr_d==1
gen eqr_ph=1 if audcode!=.
replace eqr_ph=0 if eqr_nph==1
drop dupname eqr_nph
duplicates drop
sort auditor audcode

// then manually copy the data to an excel file for manual treatment on observations
where tbd=1

use main.dta,clear
keep audfirm eqr
duplicates drop
duplicates tag eqr,gen(dup)
gsort -dup eqr
tab dup
keep if dup==0

preserve
cd $dir1
import excel using audit_EQR.xls,first clear sheet("Sheet2")
drop if tbd==1
rename auditor eqr
cd $dir0
save temp.dta,replace
restore
merge 1:1 eqr using temp.dta
format audcode %14.0g
drop _m

// then manually copy the "dup=0" data to replace the "Sheet2" of audit_EQR.xls

use main.dta,clear
keep audfirm eqr

```

```

duplicates drop
duplicates tag eqr,gen(dup)
gsort -dup eqr
tab dup
keep if dup==1

// then manually copy the "dup=1" data to append to the "Sheet2" of audit_EQR.xls

cd $dir1
import excel using audit_upto2015.xls,first clear
keep code yr audcode* auditor* audfirm
reshape long audcode auditor, i(code yr audfirm) j(id)
drop if audcode==.
keep audcode auditor audfirm
duplicates drop
cd $dir0
format audcode %14.0g
duplicates tag auditor audfirm,gen(dup)
gsort -dup auditor
keep if dup==0

preserve
cd $dir1
import excel using audit_EQR.xls,first clear sheet("Sheet3")
cd $dir0
save temp.dta,replace
restore
merge 1:1 auditor audfirm using temp.dta
keep if _m>=2
replace audfirm=audfirm+"会计师事务所（特殊普通合伙）"

// then manually copy the matched data to the "Sheet2" of audit_EQR.xls
cd $dir1
import excel using audit_upto2015.xls,first clear
keep code yr audcode* auditor* audfirm
reshape long audcode auditor, i(code yr audfirm) j(id)
drop if audcode==.
keep audcode auditor audfirm
duplicates drop
cd $dir0
format audcode %14.0g
sort auditor audcode audfirm

```

```

*** Merging the prepared EQ reviewer data
// Through the procedures described in Steps 1.1 and 1.2, we get prepared a database of
EQRs with a matched CPA code, for each listed company with a stock code (stored in
Sheet 2 of audit_EQR.xls).
// For very observations where there is a duplicate name for different individual EQ
reviewers in the same audit firm, we manually label them as ambig = 1 and drop them
from the analyses because we are not sure which CPA code can be matched to the name of
the EQ reviewer.

cd $dir0
use main.dta,clear

preserve
cd $dir1
import excel using audit_EQR.xls,first clear sheet("Sheet2")
cd $dir0
save temp.dta,replace
restore
merge m:1 audfirm eqr using temp.dta
drop _m
rename audcode eqrcode
format eqrcode %14.0g
tab yr ambig
drop if ambig==1
drop ambig

replace audfirm="中审华寅五洲会计师事务所（特殊普通合伙）" if audfirm=="中审华会计
师事务所（特殊普通合伙）" & yr==2015 // one audit firm changed name in 2015

save main.dta,replace

```

```

*** Introduce audit team members' CPA codes

cd $dir0
use main.dta,clear

duplicates tag code yr, gen(dup) // check duplicate company-year observations
gsort -dup code yr
duplicates drop code yr,force
drop dup

preserve
cd $dir1
import excel using audit_upto2015.xls,first clear
keep code yr audcode* auditor* ta
cd $dir0
save temp.dta,replace
restore
merge 1:1 code yr using temp.dta
keep if _m==3
drop _m
format audcode* %14.0g
save main.dta,replace

gen eqr_sign=(eqr==auditor1 | eqr==auditor2)
tab yr eqr_sign,row
gsort -eqr_sign yr
drop if eqr_sign==1
drop eqr_sign

save main.dta,replace

```



```

*** Import auditor background information and generate related variables
// We obtain the demographic and professional information for each individual auditor
from the MOF. We have maintained databases on CPA background information at
different times (with a basic database titled as "cpa.dta" in $dir2, and supplementary
databases titled as "additionalcpa.xls" in $dir2 and "cpa.dta" in
$dir2\auditor_background), including the gender (with the variable name "gender"),
education (with the variable name "edu"), birthday (with the variable name "birthday"),
and the date when the auditor was approved to have her/his CPA license (with the
variable name "approvaldate").

```

```

cd $dir0
use main.dta,clear

```

```

** from basic CPA database (cpa.dta)

```

```

preserve
cd $dir2
use cpa.dta,clear
rename cpacode audcode1
foreach i of varlist gender edu birthday approvaldate {
rename `i' `i'1
}
keep audcode1 gender1 edu1 birthday1 approvaldate1
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode1 using temp.dta
drop if _m==2
drop _m

```

```

preserve
cd $dir2
use cpa.dta,clear
rename cpacode audcode2
foreach i of varlist gender edu birthday approvaldate {
rename `i' `i'2
}
keep audcode2 gender2 edu2 birthday2 approvaldate2
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode2 using temp.dta
drop if _m==2
drop _m

```

```

preserve
cd $dir2
use cpa.dta,clear
rename cpacode eqrcode
foreach i of varlist gender edu birthday approvaldate {
rename `i' `i'_eqr
}
keep eqrcode gender_eqr edu_eqr birthday_eqr approvaldate_eqr
cd $dir0
save temp.dta,replace
restore
merge m:1 eqrcode using temp.dta
drop if _m==2
drop _m

```

// from additional cpa database (additionalcpa.xls)

```

preserve
cd $dir2
import excel using additionalcpa.xls,first clear
rename cpacode audcode1
foreach i of varlist gender edu birthday approvaldate {
rename `i' `i'1
}
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode1 using temp.dta,keepusing(gender1 edu1 birthday1 approvaldate1)
update replace
drop if _m==2
drop _m

```

```

preserve
cd $dir2
import excel using additionalcpa.xls,first clear
rename cpacode audcode2
foreach i of varlist gender edu birthday approvaldate {
rename `i' `i'2
}
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode2 using temp.dta,keepusing(gender2 edu2 birthday2 approvaldate2)

```

```

update replace
drop if _m==2
drop _m

preserve
cd $dir2
import excel using additionalcpa.xls,first clear
rename cpacode eqrcode
foreach i of varlist gender edu birthday approvaldate {
rename `i' `i'_eqr
}
cd $dir0
save temp.dta,replace
restore
merge m:1 eqrcode using temp.dta,keepusing(gender_eqr edu_eqr birthday_eqr
approvaldate_eqr) update replace
drop if _m==2
drop _m

```

```
// from additional cpa database ($dir2\auditor_background\cpa.dta)
```

```

preserve
cd $dir2\auditor_background
use cpa.dta,clear
rename birthday birth
keep audcode gender edu birth approval
destring audcode,replace force
drop if audcode==.
duplicates drop audcode, force
rename audcode audcode1
foreach i of varlist gender edu birth approval {
rename `i' `i'1
}
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode1 using temp.dta, update replace
drop if _m==2
drop _m

```

```

preserve
cd $dir2\auditor_background
use cpa.dta,clear
rename birthday birth

```

```

keep audcode gender edu birth approval
destring audcode,replace force
drop if audcode==.
duplicates drop audcode, force
rename audcode audcode2
foreach i of varlist gender edu birth approval {
    rename `i' `i'2
}
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode2 using temp.dta, update replace
drop if _m==2
drop _m

preserve
cd $dir2\auditor_background
use cpa.dta,clear
rename birthday birth
keep audcode gender edu birth approval
destring audcode,replace force
drop if audcode==.
duplicates drop audcode, force
rename audcode eqrcode
foreach i of varlist gender edu birth approval {
    rename `i' `i'_eqr
}
cd $dir0
save temp.dta,replace
restore
merge m:1 eqrcode using temp.dta, update replace
drop if _m==2
drop _m

** generate auditor attribute variables

cap drop female* abvbach* age* cpaexp*
local group "1 2 _eqr"
foreach i of local group {
    gen female`i'=(gender`i'=="女") if gender`i'!=""
    gen abvbach`i'=(regexm(edu`i',"本") | regexm(edu`i',"硕") | regexm(edu`i',"博")) if
    edu`i'!=""
    gen age`i'=(mdy(12,31,yr)-birthday`i')/365
    replace age`i'=(mdy(12,31,yr)-date(birth`i',"YMD"))/365 if age`i'==.
}

```

```

gen cpaexp`i'=(mdy(12,31,yr)-approvaldate`i')/365
replace cpaexp`i'=(mdy(12,31,yr)-date(approval`i',"YMD"))/365 if cpaexp`i'==.
}
tabstat female* abvbach* age* cpaexp*,s(n mean sd min q max) c(s) long

local group "1 2 _eqr"
foreach i of local group {
gen lackinfo`i'=1 if female`i'==. | abvbach`i'==. | age`i'==. | cpaexp`i'==.
}

cap drop cpaexp_eng
gen cpaexp_eng=cpaexp1+cpaexp2

save main.dta,replace

```

*** Introduce equity partner's identity and equity shareholding
 // We obtain proprietary data from the MOF on the equity partner's identity (including the name [with the variable name "auditor"] and CPA code [with the variable name "cpacode"] for each equity partner of audit firms) and equity shareholding (with the variable name "share"), and total number of equity partners (with the variable name "shno") in each year(with the variable name "yr"). We maintain the database titled as "share.xls".

```
cd $dir0
use main.dta,clear
```

```
preserve
cd $dir2
import excel using share.xls,first clear
keep cpacode auditor yr share
replace cpacode=. if cpacode==0
duplicates drop cpacode auditor yr, force
rename cpacode eqrcode
rename share eqrshare
rename auditor eqr
cd $dir0
save temp.dta,replace
restore
merge m:1 eqrcode eqr yr using temp.dta, update replace
drop if _m==2
drop _m
```

```
preserve
cd $dir2
import excel using share.xls,first clear
keep cpacode auditor yr share
replace cpacode=. if cpacode==0
duplicates drop cpacode auditor yr, force
rename cpacode audcode1
rename share aud1share
rename auditor auditor1
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode1 auditor1 yr using temp.dta, update replace
drop if _m==2
drop _m
```

```
preserve
```

```

cd $dir2
import excel using share.xls,first clear
keep cpacode auditor yr share
replace cpacode=. if cpacode==0
duplicates drop cpacode auditor yr, force
rename cpacode audcode2
rename share aud2share
rename auditor auditor2
cd $dir0
save temp.dta,replace
restore
merge m:1 audcode2 auditor2 yr using temp.dta, update replace
drop if _m==2
drop _m

replace eqrshare=0 if eqrshare==.
replace aud1share=0 if aud1share==.
replace aud2share=0 if aud2share==.

cap drop audshare
gen audshare=aud1share+aud2share // generate combined shareholding by two signing
                                auditors

local group "eqr aud1 aud2 aud"
foreach i of local group {
    cap drop ln`i'share
    gen ln`i'share=ln(`i'share+1)
}

local group "eqr aud1 aud2"
foreach i of local group {
    gen `i'share_d=(`i'share!=0) if `i'share!=.
}
gen audshare_d=(audshare!=0) if audshare!=.

cap drop *_eqchg
tsset code yr
local group "eqr aud1 aud2 aud"
foreach i of local group {
    gen `i'_eqchg=`i'share-1.`i'share if yr>=2013
}

save main.dta,replace

```

```

*** Introduce audit firm ranking (CICPA rank)
// The CICPA ranks top 100 audit firms nationwide on its website (www.cicpa.org.cn)
every year. We compile the ranking data (with the variable name "rank_cicpa"), annual
total revenues (with the variable name "totrev"), and total number of CPAs (with the
variable name "cpano") for our sample period and stored in an excel file titled as
"rank_cicpa_2013to2015.xlsx".
// We identify large audit firms as those who ranked top-10 in each year during the
sample period (i.e., 2013-2015), thus ensuring the group of large vs. small audit firms to
be consistent across the period. Then we measure small firms in the sample (with the
variable name "ntop10", labeled as SMAUD in the paper).
// In untabulated analyses, we further differentiate between medium and small firms by
using the 25th ranking as the cutoff (with the variable name "lowrank" = 1 for audit firms
ranked lower than 25th [i.e., small-sized], and 0 for audit firms ranked higher than 25th
[i.e., medium-sized]).

preserve
cd $dir6
import excel using rank_cicpa_2013to2015.xlsx,first clear
replace audfirm=audfirm+"会计师事务所（特殊普通合伙）"
cd $dir0
save temp.dta,replace
restore
merge m:1 audfirm yr using temp.dta
drop _m

cap drop top10 ntop10
gen top10=(rank_cicpa<=8 | (rank_cicpa==9&yr==2013) | (rank_cicpa==10&yr==2014)
| (rank_cicpa==10&yr==2015)) if rank_cicpa!=. // To identify large audit firms as those
who consistently ranked top-10 in every year of the sample
period

gen ntop10=1-top10
cap drop medium small
gen medium=(ntop10==1 & lowrank!=1) if rank_cicpa!=.
gen small=(ntop10==1 & lowrank==1) if rank_cicpa!=.

save main.dta,replace

```


*** Identify the number of public company audits on which the EQ reviewer worked during the current year

// We measure port_eqr (label as *PORT_REV* in the paper) as the number of public company audits on which the EQ reviewer worked during the current year

// This includes two types of workloads, one being the EQ reviews conducted by an EQ reviewer (with the variable name "eqr_totmonitor"), the other being audits conducted by an EQ reviewer (with the variable name "eqr_sv").

// port_eqr = eqr_totmonitor + eqr_sv.

** Identify an EQR's total number of monitored clients in a given year

gen id=1

bysort yr audfirm eqrcode: egen eqr_totmonitor=total(id) if eqrcode!=.

** identify EQR's current year's experience serving as signing auditors

set more off

cap drop eqr_sv*

forval j=1/2 {

forval i=2013/2015 {

preserve

keep eqrcode yr

keep if yr==`i'

drop if eqrcode==.

rename eqrcode audcode`j'

duplicates drop

save temp.dta,replace

restore

preserve

cd \$dir1

import excel using audit_upto2015.xls, first clear

keep if yr==`i'

keep audcode`j'

cd \$dir0

merge m:1 audcode`j' using temp.dta

keep if _m==3

drop _m

gen id=1

rename audcode`j' eqrcode

bysort eqrcode: egen eqr_sv`j'=total(id)

keep eqrcode eqr_sv`j'

duplicates drop

gen yr=`i'

```

save temp1.dta,replace
restore
merge m:1 eqrcode yr using temp1.dta, update
drop if _m==2
drop _m
save main.dta,replace
}
}

forval i=1/2 {
replace eqr_sv`i'=0 if eqr_sv`i'==. & yr<=2015
}
gen eqr_sv=eqr_sv1+eqr_sv2

gen port_eqr=eqr_totmonitor+eqr_sv

save main.dta,replace

```

```

*** Identify number of public company audits on which two engagement partners worked
during the current year
// We measure port_aud1 (label as PORT_ENG1 in the paper) as the number of public
company audits on which the lead engagement partner worked during the current year.
// We measure port_aud2 (label as PORT_ENG2 in the paper) as the number of public
company audits on which the second engagement partner worked during the current year.
// port_aud1 (or port_aud2) includes two types of workloads, one being audits conducted
by the engagement partner (with the variable name "aud1totclt" or "aud2totclt"), the other
being the EQ reviews conducted by the engagement partner (with the variable name
"aud1_rev" or "aud2_rev").
// port_aud1 = aud1totclt + aud1_rev.
// port_aud2 = aud2totclt + aud2_rev.

** identify signing auditors' audit workload in a given year

```

```

preserve
keep code yr audcode1 audcode2 id
reshape long audcode, i(code yr id) j(no)
drop no
bysort yr audcode: egen audtotclt=total(id)
keep audcode yr audtotclt
duplicates drop
rename audcode audcode1
rename audtotclt aud1totclt
save temp.dta,replace
restore
merge m:1 audcode1 yr using temp.dta
drop if _m==2
drop _m

```

```

preserve
use temp.dta,clear
rename audcode1 audcode2
rename aud1totclt aud2totclt
save temp.dta,replace
restore
merge m:1 audcode2 yr using temp.dta
drop if _m==2
drop _m

```

```

save main.dta,replace

```

```

** identify signing auditors' EQ workload in a given year

```

```

preserve
keep yr audcode1
keep if yr>=2013 & yr<=2015
duplicates drop
drop if audcode1==.
rename audcode1 eqrcode
save temp.dta,replace
restore
merge m:1 yr eqrcode using temp.dta
gen match1=1 if _m==3
drop if _m==2
drop _m
preserve
keep yr eqrcode match1
rename eqrcode audcode1
bysort yr audcode1:egen aud1_rev=total(match1)
duplicates drop
save temp.dta,replace
restore
merge m:1 yr audcode1 using temp.dta
drop if _m==2
drop _m

```

```

preserve
keep yr audcode2
keep if yr>=2013 & yr<=2015
duplicates drop
drop if audcode2==.
rename audcode2 eqrcode
save temp.dta,replace
restore
merge m:1 yr eqrcode using temp.dta
gen match2=1 if _m==3
drop if _m==2
drop _m
preserve
keep yr eqrcode match2
rename eqrcode audcode2
bysort yr audcode2:egen aud2_rev=total(match2)
duplicates drop
save temp.dta,replace
restore
merge m:1 yr audcode2 using temp.dta
drop if _m==2

```

```
drop _m
```

```
replace aud1_rev=0 if aud1_rev==. & yr>=2013 & yr<=2015 & audcode1!=.
```

```
replace aud2_rev=0 if aud2_rev==. & yr>=2013 & yr<=2015 & audcode2!=.
```

```
forval i=1/2 {
```

```
gen port_aud`i'=aud`i'totclt+aud`i'_rev // compute total workload (i.e., audit clients +  
review clients)
```

```
}
```

```
gen audtotclt=aud1totclt+aud2totclt
```

```
gen aud_rev=aud1_rev+aud2_rev
```

```
gen port_eng=port_aud1+port_aud2
```

```
save main.dta,replace
```

*** Identify EQR's recent-2-year auditing history of monitored companies
 // This step serves to generate the variable `prior_audit` (labeled as *PRIORENG* in the paper, which is an indicator variable equal to one if the EQ reviewer served as the client's engagement partner in any of the previous two years, and zero otherwise.

```

set more off
forval j=1/2 {
  forval i=1/3 {
    use main.dta,clear
    keep code yr eqrcode
    keep if eqrcode!=.
    keep if yr==2012+`i'
    rename eqrcode audcode`j'

    preserve
    cd $dir1
    import excel using audit_upto2015.xls,first clear
    keep code yr audcode`j'
    keep if yr<=2012+`i'-1
    keep if yr>=2012+`i'-1-1
    drop yr
    duplicates drop
    cd $dir0
    save temp`j'_`i'.dta,replace
    restore

    merge 1:1 code audcode`j' using temp`j'_`i'.dta
    keep if _m==3
    drop _m
    gen prior_audit=1
    save temp`j'_`i'.dta,replace
  }
}

use temp1_1.dta,clear
forval i=2/3 {
  append using temp1_`i'.dta
}
forval i=1/3 {
  append using temp2_`i'.dta
}

rename audcode1 eqrcode
replace eqrcode=audcode2 if eqrcode==.

```

```

gen prior_audit2=1 if audcode2!=.
replace prior_audit=. if audcode2!=.
rename prior_audit prior_audit1
drop audcode2
gen prior_audit=1

duplicates tag code yr eqrcode,gen(dup)
gsort -dup code yr eqrcode
replace prior_audit1=1 if dup==1 & prior_audit1==.
replace prior_audit2=1 if dup==1 & prior_audit2==.
duplicates drop
drop dup
save temp.dta,replace

use main.dta,clear
merge 1:1 code yr eqrcode using temp.dta
drop _m
replace prior_audit=0 if prior_audit==.
replace prior_audit1=0 if prior_audit1==.
replace prior_audit2=0 if prior_audit2==.
tab yr prior_audit, row

save main.dta,replace

```

```

*** Import audit and financial data and related variables
// We obtain proprietary audit adjustment data from the MOF, which include pre-audit
earnings (which is the pre-audit total profit, with the variable name "pre_profit"), audited
earnings (which is audited total profit, with the variable name "post_profit"), pre-audit
total assets (with the variable name "pre_asst"), and audited total assets (with the
variable name "post_asst"). Earnings (total assets) adjustment data are maintained in
audit_upto2015.xls (asst_upto2015.dta).
// As a procedure to ensure the data quality, we compare if there are inconsistencies
between the CSMAR and MOF databases in the reported values of audited earnings,
and compute their difference (with the variable name "diff_tp", = the absolute value
of the difference between CAMAR audited earnings and MOF audited earnings,
scaled by the absolute value of CAMAR audited earnings). The inconsistencies are
partly explained by the data entry person using the accounts of the parent company
rather than group accounts when entering data into the MOF database (Lennox et al.
[2016]). After taking into account the rounding differences between the CSMAR and
MOF databases, we define the two databases as being consistent when the reported
difference in audited earnings is less than  $\pm 1\%$ .
// We obtain other audit and financial data from various public sources (CSMAR,
WIND, DIB, and annual reports), including leverage (with the variable name "lev",
labeled as LEV in the paper), return on assets (with the variable name "roa", labeled as
ROA in the paper), cashflows from operating activities (with the variable name "ocf"),
number of consolidated subsidiaries (hand collected from annual reports, with the
variable name "subs" (raw values) and "lnsubs" (logged values), labeled as LnSUBS in the
paper), audit firm tenure (with the variable name "ften", labeled as TENURE in the
paper), partner tenure (with the variable name "pten_accu*", for generating RELTEN in
the paper), state ownership (with the variable name "soe", labeled as SOE in the paper),
board size (with the variable name "boardsize", labeled as BODSIZE in the paper), the
number of independent directors (with the variable name "inddir", for generating
INDDIRP in the paper), duality of chairperson and CEO (with the variable name
"dual_raw", labeled as DUAL in the paper), internal control weaknesses (with the
variable name "dicw", labeled as ICW in the paper), listing age (with the variable name
"listage", for sample selection). These data items are maintained in various
self-maintained datasets.

cd $dir0
use main.dta,clear

preserve
cd $dir1
import excel using audit_upto2015.xls, first clear
merge 1:1 code yr using $dir5\tp\tp.dta // CSMAR audited earnings
drop if _m==2
drop _m
gen diff_tp=abs(post_profit-tp)/abs(tp)

```



```

cd $dir0
save temp.dta,replace
restore

merge m:1 code yr using temp.dta, keepusing(fr pre_profit post_profit op ta indu2012
diff_tp) update replace
drop if _m==2
drop _m
gen adj_dum=(pre_profit!=post_profit) if pre_profit!=. & post_profit!=.
gen adjmag=abs(pre_profit-post_profit)/abs(pre_profit) if pre_profit!=. & post_profit!=.
gen lnadjmag=ln(adjmag+1)
gen adjsign=adj_dum
replace adjsign=2 if pre_profit-post_profit>0 & pre_profit!=. & post_profit!=.

merge m:1 code yr using $dir1\asst_upto2015.dta, keepusing(pre_asst post_asst)
drop if _m==2
drop _m

merge m:1 code yr using $dir3\audfee\audfee.dta, keepusing(lev roa subs)
drop if _m==2
drop _m
gen lnsubs=ln(subs+1)

cap drop ften
merge m:1 code yr using $dir3\audfirm_tenure\ften.dta,keepusing(ften)
drop if _m==2
drop _m

merge m:1 code yr using $dir3\ptenure_mrot\pten.dta,keepusing(pten_accu*)
drop if _m==2
drop _m

merge 1:1 code yr using $dir5\cashflow.dta,keepus(ocf)
drop if _m==2
drop _m
gen pre_acc=(pre_profit-ocf)/pre_asst

merge 1:1 code yr using $dir7\ownership\soe.dta,keepus(soe)
drop if _m==2
drop _m
replace soe=0 if soe==.

preserve
cd $dir7\board

```

```

import excel using board.xlsx,first clear
cd $dir0
save temp.dta,replace
restore
merge 1:1 code yr using temp.dta, update replace
drop if _m==2
drop _m
gen inddirp=inddir/boardsize
gen dual=(dual_raw==1) if dual_raw!=.

preserve
cd $dir7\board
import excel using missing_dual.xls,first clear // hand collecting missing values in
                                                    the variable "dual_raw"

cd $dir0
save temp.dta,replace
restore
merge 1:1 code yr using temp.dta, update
drop if _m==2
drop _m

preserve
cd $dir8
import excel using icw2013_2016.xlsx,first clear
replace code=substr(code,1,6)
destring code,replace
cd $dir0
save temp.dta,replace
restore
merge 1:1 code yr using temp.dta
drop if _m==2
drop _m
foreach i of varlist fricw* nfricw* {
  replace `i'=0 if `i'==. & yr>=2013
}
local group "fr nfr"
foreach i of local group {
  gen `i'icw=`i'icw_mat+`i'icw_sig
}
gen icw=fricw_mat+fricw_sig+nfricw_mat+nfricw_sig
gen dicw=(icw>0) if yr>=2013

preserve
cd $dir5

```

```

import excel using fin2016.xls,first clear
keep code listdate
replace code=substr(code,1,6)
destring code,replace
cd $dir0
save temp.dta,replace
restore
merge m:1 code using temp.dta
drop if _m==2
drop _m
gen listage=(mdy(12,31,yr)-date(listdate,"YMD"))/365

preserve
cd $dir5
import excel using listdate.xls,first clear
keep code listdt
destring code,replace
cd $dir0
save temp.dta,replace
restore
merge m:1 code using temp.dta
drop if _m==2
drop _m
replace listage=(mdy(12,31,yr)-listdt)/365 if listage==.

tsset code yr
foreach i of varlist lneqrshare lnaudshare lnaud1share lnaud2share lnadjmag adjmag_r {
    gen l`i'=l.`i'
}

encode audfirm, gen(audfirm_id)

save main.dta,replace

```

```

*** Introduce client importance data
// We measure office-level client importance (with the variable name "ci_o", labeled as
CI in the paper).
// Audit office data (i.e., an audit is conducted by which audit office) are obtained from
the CSRC. We maintain the data in the file "branch.xlsx".

```

```

preserve
cd $dir2\audbranch
import excel using branch.xlsx,first clear
cd $dir1
save temp.dta,replace
restore

```

```

preserve
import excel using audit_upto2015.xls,first clear
merge 1:1 code yr using temp.dta
drop if _m==2
drop _m
keep code yr branch ta
drop if ta==.
drop if branch==" "
bysort yr branch: egen totta=total(ta)
gen ci_o=ta/totta
keep code yr ci_o
cd $dir0
save temp.dta,replace
restore

```

```

merge 1:1 code yr using temp.dta
drop if _m==2
drop _m

```

```

save main.dta,replace

```

*** Measuring an EQR's prior co-signing experience with current-year signing auditors
 // We measure dcosign (labeled as *PRIORCOSIGN* in the paper, = 1 if the EQ reviewer previously worked with at least one of the two engagement partners, and 0 otherwise).

```

preserve
cd $dir1
import excel using audit_upto2015.xls,first clear
cd $dir0
save temp.dta,replace
restore

forval i=2013/2015 {
  preserve
  keep if yr==`i'
  keep if eqrcode!=. & audcode1!=.
  keep eqrcode audcode1
  rename audcode1 audcode2
  rename eqrcode audcode1
  duplicates drop
  save temp1_1_`i'.dta,replace
  restore

  preserve
  use temp.dta,clear
  keep if yr<=`i'-1
  merge m:1 audcode1 audcode2 using temp1_1_`i'.dta
  drop if _m==2
  gen cosign1=1 if _m==3
  drop _m
  rename audcode1 eqrcode
  rename audcode2 audcode1
  keep if cosign1==1
  keep eqrcode audcode1 cosign1
  bys eqrcode audcode1: egen tcosign1=total(cosign1)
  drop cosign1
  duplicates drop
  gen yr=`i'
  save temp1_1_`i'.dta,replace
  restore
}

forval i=2013/2015 {
  preserve
  keep if yr==`i'

```

```

keep if eqrcode!=. & audcode1!=.
keep eqrcode audcode1
rename eqrcode audcode2
duplicates drop
save temp1_2_`i'.dta,replace
restore

preserve
use temp.dta,clear
keep if yr<=`i'-1
merge m:1 audcode1 audcode2 using temp1_2_`i'.dta
drop if _m==2
gen cosign1=1 if _m==3
drop _m
rename audcode2 eqrcode
keep if cosign1==1
keep eqrcode audcode1 cosign1
bys eqrcode audcode1: egen tcosign1=total(cosign1)
drop cosign1
duplicates drop
gen yr=`i'
save temp1_2_`i'.dta,replace
restore
}

forval i=2013/2015 {
preserve
keep if yr==`i'
keep if eqrcode!=. & audcode2!=.
keep eqrcode audcode2
rename eqrcode audcode1
duplicates drop
save temp2_1_`i'.dta,replace
restore

preserve
use temp.dta,clear
keep if yr<=`i'-1
merge m:1 audcode1 audcode2 using temp2_1_`i'.dta
drop if _m==2
gen cosign2=1 if _m==3
drop _m
rename audcode1 eqrcode
keep if cosign2==1

```

```

keep eqrcode audcode2 cosign2
bys eqrcode audcode2: egen tcosign2=total(cosign2)
drop cosign2
duplicates drop
gen yr=`i'
save temp2_1_`i'.dta,replace
restore
}

```

```

forval i=2013/2015 {
preserve
keep if yr==`i'
keep if eqrcode!=. & audcode2!=.
keep eqrcode audcode2
rename audcode2 audcode1
rename eqrcode audcode2
duplicates drop
save temp2_2_`i'.dta,replace
restore
}

```

```

preserve
use temp.dta,clear
keep if yr<=`i'-1
merge m:1 audcode1 audcode2 using temp2_2_`i'.dta
drop if _m==2
gen cosign2=1 if _m==3
drop _m
rename audcode2 eqrcode
rename audcode1 audcode2
keep if cosign2==1
keep eqrcode audcode2 cosign2
bys eqrcode audcode2: egen tcosign2=total(cosign2)
drop cosign2
duplicates drop
gen yr=`i'
save temp2_2_`i'.dta,replace
restore
}

```

```

preserve
use temp1_1_2013.dta,clear
append using temp1_1_2014.dta
append using temp1_1_2015.dta
append using temp1_2_2013.dta

```

```

append using temp1_2_2014.dta
append using temp1_2_2015.dta
bys eqrcode audcode1 yr: egen ttcosign1=total(tcosign1)
drop tcosign1
rename ttcosign1 cosign1
duplicates drop
save temp.dta,replace
restore
merge m:1 eqrcode audcode1 yr using temp.dta
drop if _m==2
drop _m

```

```

preserve
use temp2_1_2013.dta,clear
append using temp2_1_2014.dta
append using temp2_1_2015.dta
append using temp2_2_2013.dta
append using temp2_2_2014.dta
append using temp2_2_2015.dta
bys eqrcode audcode2 yr: egen ttcosign2=total(tcosign2)
drop tcosign2
rename ttcosign2 cosign2
duplicates drop
save temp.dta,replace
restore
merge m:1 eqrcode audcode2 yr using temp.dta
drop if _m==2
drop _m

```

```

forval i=1/2 {
replace cosign`i'=0 if cosign`i'==. & yr>=2013 & yr<=2015
}
gen cosign=cosign1+cosign2
gen dcosign=(cosign>0)

```

```

save main.dta,replace
forval i=1/2 {
forval j=1/2 {
forval k=2013/2015 {
erase temp`i'`j'`k'.dta
}
}
}

```



```
*** Measure difference in experience between EQ reviewer and engagement partners
// We measure expdiff (labeled as RELEXP in the paper, = EXP_REV minus
EXP_ENGMAX, where EXP_ENGMAX is the maximum of EXP_ENG1 and EXP_ENG2).
```

```
gen cpaexp_max=max(cpaexp1,cpaexp2)
gen expdiff=cpaexp_eqr-cpaexp_max
```

```
save main.dta,replace
```

*** Measure difference in partner tenure between EQ reviewer and engagement partners
 // We measure ptendiff (labeled as *RELTEN* in the paper, = *TEN_REV* minus *TEN_ENGMAX*, where *TEN_REV* is the tenure of the EQ reviewer, *TEN_ENGMAX* is the maximum of *TEN_ENG1* and *TEN_ENG2*, *TEN_ENG1* is the tenure of the lead engagement partner, and *TEN_ENG2* is the tenure of the junior engagement partner.).
 // When measuring the tenure of each auditor, we consider their service as either an engagement auditor or EQ reviewer.

** EQR's tenure serving as an EQR

```
gen eqrten_eqr=1 if yr==2013

forval i=2014/2015 {
  preserve
  keep code yr eqrcode
  keep if yr>=2013 & yr<=`i'
  gen no=1
  bysort code eqrcode: egen eqrten_eqr=total(no)
  keep if yr==`i'
  tab eqrten_eqr
  keep code yr eqrten_eqr
  save temp.dta,replace
  restore
  merge 1:1 code yr using temp.dta,update
  drop if _m==2
  drop _m
}
```

** Engagement partner's tenure serving as an EQR

```
preserve
keep code yr eqrcode
keep if yr==2013
keep if eqrcode!=.
save temp.dta,replace
restore

forval i=2014/2015 {
  preserve
  keep code yr audcode*
  keep if yr==`i'
  drop if audcode1==. | audcode2==.
  reshape long audcode,i(code yr) j(id)
  drop id
```

```

rename audcode eqrcode
replace yr=2013
merge 1:1 code yr eqrcode using temp.dta
keep if _m==3
drop _m
gen eqrten_eng2013=1
replace yr=`i'
save temp1.dta,replace
restore
merge 1:1 code yr using temp1.dta,update
drop if _m==2
drop _m
}

```

```

preserve
keep code yr eqrcode
keep if yr==2014
keep if eqrcode!=.
save temp.dta,replace
restore

```

```

preserve
keep code yr audcode*
keep if yr==2015
drop if audcode1==. | audcode2==.
reshape long audcode,i(code yr) j(id)
drop id
rename audcode eqrcode
replace yr=2014
merge 1:1 code yr eqrcode using temp.dta
keep if _m==3
drop _m
gen eqrten_eng2014=1
replace yr=2015
save temp1.dta,replace
restore
merge 1:1 code yr using temp1.dta,update
drop if _m==2
drop _m

```

```

gen eqrten_eng=.
replace eqrten_eng=1 if yr>=2014 & eqrten_eng2013==1 & eqrten_eng2014==.
replace eqrten_eng=1 if yr>=2014 & eqrten_eng2013==. & eqrten_eng2014==1
replace eqrten_eng=2 if yr>=2014 & eqrten_eng2013==1 & eqrten_eng2014==1

```

```
replace eqrten_eng=0 if eqrten_eng==.  
save main.dta,replace
```

**** EQ reviewer's accumulated tenure as an engagement auditor for a monitored company
(with the variable name "eqr_accu")**

```
set more off  
forval j=1/2 {  
  forval i=1/3 {  
    use main.dta,clear  
    keep code yr eqrcode  
    keep if eqrcode!=.  
    keep if yr==2012+`i'  
    rename eqrcode audcode`j'
```

```
  preserve  
  cd $dir1  
  import excel using audit_upto2015.xls,first clear  
  keep code yr audcode`j'  
  keep if yr<=2012+`i'-1  
  drop yr  
  gen id=1  
  bys audcode`j' code: egen eqr_totaud`j'=total(id)  
  drop id  
  duplicates drop  
  cd $dir0  
  save temp`j'_'i'.dta,replace  
  restore
```

```
  merge 1:1 code audcode`j' using temp`j'_'i'.dta  
  keep if _m==3  
  drop _m  
  save temp`j'_'i'.dta,replace  
}  
}
```

```
use temp1_1.dta,clear  
forval i=2/3 {  
  append using temp1_`i'.dta  
}  
forval i=1/3 {  
  append using temp2_`i'.dta  
}
```

```

rename audcode1 eqrcode
replace eqrcode=audcode2 if eqrcode==.
replace eqr_totaud1=eqr_totaud2 if eqr_totaud1==.
drop audcode2 eqr_totaud2
rename eqr_totaud1 eqr_totaud
duplicates tag code yr eqrcode,gen(dup)
gsort -dup code yr eqrcode
bys eqrcode code yr: egen eqr_ttotaud=total(eqr_totaud)
drop dup eqr_totaud
rename eqr_ttotaud eqr_accu
duplicates drop
save temp.dta,replace

use main.dta,clear
merge 1:1 code yr eqrcode using temp.dta
drop _m
replace eqr_accu=0 if eqr_accu==.

save main.dta,replace

** computing relative tenure difference between the EQ reviewer and the engagement
partners

gen pten_max=max(pten_accu1,pten_accu2)
gen ptendiff=eqr_accu-pten_max+eqrten_eqr-eqrten_eng

save main.dta,replace

```

*** Missing values

```
cap drop miss
egen miss=rowmiss(adj_dum $exp0 $missslist)
save main.dta,replace
```

*** Identify single-year-data clients

```
preserve
keep if $samp_full
keep code yr
gen id=1
bys code: egen totn=total(id)
keep code totn
duplicates drop
tab totn // totn = 1 for singletons in the full sample
save temp.dta,replace
restore
merge m:1 code using temp.dta,replace update
drop if _m==2
drop _m
save main.dta,replace
```

*** Rank transformation of audit adjustment and partner ownership variables

```
cap drop *_r
foreach i of varlist adjmag $exp0 lnaudshare {
cap drop totno
bysort yr: egen `i'_r=rank(`i') if $samp_fe & `i'>0, track
bysort yr: egen totno=total(id) if $samp_fe & `i'>0 & `i'!=.
replace `i'_r=`i'_r/(totno+1)
replace `i'_r=0 if $samp_fe & `i'==0
}
save main.dta,replace
```

*** Winsorization

```
cap drop *_w
winsor2 lnadjmag llnadjmag pre_acc lev roa if $samp_fe, by(yr) cut(1 99)
save main.dta,replace
```

```
*** Measure review-only EQRs
// We measure revonly (labeled as REVONLY in the paper, an indicator variable equal to
one if the EQ review is performed by a partner who only conducts EQ reviews in the full
sample during the sample period, and zero otherwise.).
```

```
** identify EQ reviewers who conduct EQ reviews and audits in the full sample
```

```
preserve
keep if $samp_full
save temp.dta,replace
restore
```

```
preserve
use temp.dta,clear
keep eqrcode
drop if eqrcode==.
duplicates drop
gen review=1
gen double audcode=eqrcode
format audcode %14.0g
save temp1.dta,replace
restore
```

```
preserve
use temp.dta,clear
keep audcode1
drop if audcode1==.
duplicates drop
rename audcode1 audcode
save temp2.dta,replace
restore
```

```
preserve
use temp.dta,clear
keep audcode2
drop if audcode2==.
duplicates drop
rename audcode2 audcode
save temp3.dta,replace
restore
```

```
preserve
use temp2.dta,clear
append using temp3.dta
```



```
duplicates drop
gen eng=1
merge 1:1 audcode using temp1.dta
keep if _m==3
drop _m
keep audcode
count
rename audcode eqrcode
gen rev_eng=1
save temp.dta,replace
restore

merge m:1 eqrcode using temp.dta
drop _m
replace rev_eng=0 if rev_eng==.
gen revonly=1-rev_eng

save main.dta,replace
```

```
*** generate sample firm identifier file
```

```
preserve
```

```
keep if $samp_fe
```

```
keep code yr
```

```
sort code yr
```

```
export excel sample.xlsx,first(var) replace
```

```
restore
```

**Section 3: Empirical analyses as shown in main tables in the paper

```
cd $dir0
use main.dta,clear
```

*** Table 1. The sample

```
// Table 1, Panel A
** sample selection
```

```
tab yr if yr>=2013 & yr<=2015 & pre_profit!=. & post_profit!=. & listage>=0 & listage!=.
tab yr if yr>=2013 & yr<=2015 & pre_profit!=. & post_profit!=. & listage>=0 & listage!=.
& diff_tp<=0.01
tab yr if yr>=2013 & yr<=2015 & pre_profit!=. & post_profit!=. & listage>=0 & listage!=.
& diff_tp<=0.01 & eqrcode!=audcode1 & eqrcode!=audcode2 & eqr!=auditor1 &
eqr!=auditor2 & miss==0
tab yr if yr>=2013 & yr<=2015 & pre_profit!=. & post_profit!=. & listage>=0 & listage!=.
& diff_tp<=0.01 & eqrcode!=audcode1 & eqrcode!=audcode2 & eqr!=auditor1 &
eqr!=auditor2 & miss==0 & totn!=1
```

```
// Table 1, Panel B
** sample distribution by year
```

```
tab yr if $samp_fe
```

```
// Table 1, Panel C
** Number of audit engagement partners and EQ reviewers in the sample
```

```
preserve
keep if $samp_fe
keep code yr audcode1 audcode2
reshape long audcode,i(code yr)j(no)
keep audcode
duplicates drop
count
restore
```

```
preserve
keep if $samp_fe
keep audcode1
duplicates drop
count
```

```
restore
```

```
preserve  
keep if $samp_fe  
keep audcode2  
duplicates drop  
count  
restore
```

```
preserve  
keep if $samp_fe  
keep eqrcode  
duplicates drop  
count  
restore
```

```
// identify the number of EQ reviewers who do both audits and EQ reviews during the  
sample period
```

```
preserve  
keep if $samp_fe  
save temp.dta,replace  
restore
```

```
preserve  
use temp.dta,clear  
keep eqrcode  
drop if eqrcode==.  
duplicates drop  
gen review=1  
gen double audcode=eqrcode  
format audcode %14.0g  
save temp1.dta,replace  
restore
```

```
preserve  
use temp.dta,clear  
keep audcode1  
drop if audcode1==.  
duplicates drop  
rename audcode1 audcode  
save temp2.dta,replace  
restore
```

```
preserve
use temp.dta,clear
keep audcode2
drop if audcode2==.
duplicates drop
rename audcode2 audcode
save temp3.dta,replace
restore
```

```
preserve
use temp2.dta,clear
append using temp3.dta
duplicates drop
gen eng=1
merge 1:1 audcode using temp1.dta
keep if _m==3
drop _m
keep audcode
count // N= 609 for partners who do reviews and audits
save temp.dta,replace
restore
```

*** Table 2. Descriptive statistics

// Table 2, Panel A

*** Audit adjustments

tab adjsign if \$samp_fe

// Table 2, Panel B

*** Descriptive statistics for the regression variables

tabstat adj_dum adjmag lnadjmag_w adjmag_r eqrshare aud1share aud2share audshare
lneqrshare lnaud1share lnaud2share lnaudshare lta lev_w roa_w lnsbs pre_acc_w soe
boardsize inddirp dual dicw ften ci_o cpaexp_eqr cpaexp1 cpaexp2 cpaexp_eng port_eqr
port_aud1 port_aud2 port_eng revonly dcosign prior_audit expdiff ptendiff if \$samp_fe,
s(n mean min p1 q p99 max) c(s) long

// Table 2, Panel C

*** Descriptive statistics for the changes in partner ownership

cap drop *_lneqchg
tsset code yr
local group "eqr aud1 aud2 aud"
foreach i of local group {
gen `i'_lneqchg=d.ln`i'share
}
tabstat eqr_lneqchg aud*_lneqchg if \$samp_fe,s(n mean min p10 q p90 max) c(s) long

foreach i of varlist eqr_lneqchg aud_lneqchg {
count if `i'<0 & \$samp_fe
count if `i'==0 & \$samp_fe
count if `i'>0 & `i'!=. & \$samp_fe
}

*** Table 3. Audit adjustments and partner ownership

```
set more off
```

```
xtset code
```

```
xi: xtlogit adj_dum $exp0 $ctrl0 $fe if $samp_fe,fe
```

```
test lneqrshare=lnaud1share
```

```
test lneqrshare=lnaud2share
```

```
$out $dir4\result, $basic $add0 replace
```

```
xi: xtlogit adj_dum $exp1 $ctrl1 $fe if $samp_fe,fe
```

```
test lneqrshare=lnaudshare
```

```
$out $dir4\result, $basic $add0
```

```
reghdfe $dep0 $exp0 $ctrl0 if $samp_fe, absorb(code audfirm_id yr) vce(cluster code)
```

```
test lneqrshare=lnaud1share
```

```
test lneqrshare=lnaud2share
```

```
$out $dir4\result, $basic $add
```

```
reghdfe $dep0 $exp1 $ctrl1 if $samp_fe, absorb(code audfirm_id yr) vce(cluster code)
```

```
test lneqrshare=lnaudshare
```

```
$out $dir4\result, $basic $add
```

```
reghdfe $dep1 $exp0 $ctrl0 if $samp_fe, absorb(code audfirm_id yr) vce(cluster code)
```

```
test lneqrshare=lnaud1share
```

```
test lneqrshare=lnaud2share
```

```
$out $dir4\result, $basic $add
```

```
reghdfe $dep1 $exp1 $ctrl1 if $samp_fe, absorb(code audfirm_id yr) vce(cluster code)
```

```
test lneqrshare=lnaudshare
```

```
$out $dir4\result, $basic $add
```

*** Table 4. The moderating effect of audit firm size (SMAUD) on the relationship between audit adjustments and partner ownership

// Table 4, Panel A

** Descriptive statistics for audit firm size and ownership

```
preserve
keep if $samp_fe
duplicates drop audfirm yr,force
tabstat totrev cpano shno,by(ntop10) s(n mean min q max) c(s) long
foreach i of varlist totrev cpano shno {
ttest `i',by(ntop10) unequal
ranksum `i',by(ntop10)
}
restore

preserve
keep if $samp_fe
tabstat eqrshare aud1share aud2share,by(ntop10) s(n mean min q max) c(s) long
foreach i of varlist eqrshare aud1share aud2share {
ttest `i',by(ntop10) unequal
ranksum `i',by(ntop10)
}
restore
```

// Table 4, Panel B

** Regression results

```
cap drop *_ntop
foreach i of varlist lneqrshare lnaud1share lnaud2share lnaudshare {
gen `i'_ntop=`i'*ntop10
}

global exp0x lneqrshare lneqrshare_ntop lnaud1share lnaud1share_ntop lnaud2share
lnaud2share_ntop ntop10
global exp1x lneqrshare lneqrshare_ntop lnaudshare lnaudshare_ntop ntop10

set more off
xi: xtlogit adj_dum $exp0x $ctrl0 i.yr if $samp_fe,fe
$out $dir4\result, $basic $add0 replace
xi: xtlogit adj_dum $exp1x $ctrl1 i.yr if $samp_fe,fe
$out $dir4\result, $basic $add0
reghdfe $dep0 $exp0x $ctrl0 if $samp_fe,absorb(code yr) vce(cluster code)
$out $dir4\result, $basic $add
```



```
reghdfe $dep0 $exp1x $ctrl1 if $samp_fe,absorb(code yr) vce(cluster code)
$out $dir4\result, $basic $add
reghdfe $dep1 $exp0x $ctrl0 if $samp_fe,absorb(code yr) vce(cluster code)
$out $dir4\result, $basic $add
reghdfe $dep1 $exp1x $ctrl1 if $samp_fe,absorb(code yr) vce(cluster code)
$out $dir4\result, $basic $add
```

*** Table 5. Auditors who work as both engagement partners and EQ reviewers during the sample period

```
use main.dta,clear
keep if $samp_fe
preserve
keep eqrcode
drop if eqrcode==.
duplicates drop
gen review=1
gen double audcode=eqrcode
format audcode %14.0g
save temp1.dta,replace
restore
```

```
preserve
keep audcode1
drop if audcode1==.
duplicates drop
rename audcode1 audcode
save temp2.dta,replace
restore
```

```
preserve
keep audcode2
drop if audcode2==.
duplicates drop
rename audcode2 audcode
save temp3.dta,replace
restore
```

```
preserve
use temp2.dta,clear
append using temp3.dta
duplicates drop
gen eng=1
merge 1:1 audcode using temp1.dta
keep if _m==3
drop _m
keep audcode
count // N= 609 for partners who do reviews and audits
save temp.dta,replace
restore
```

```

preserve
use temp.dta,clear
rename audcode eqrcode
save temp1.dta,replace
restore
preserve
merge m:1 eqrcode using temp1.dta
keep if _m==3 // 2373 company-years for reviews
drop _m
rename eqrcode audcode0
rename eqr auditor0
rename lneqrshare lnaudshare0
rename lnaud1share lnaudshare1
rename lnaud2share lnaudshare2
rename cpaexp_eqr cpaexp0
rename port_eqr port_aud0
cap drop id
cap drop lnaudshare
reshape long audcode auditor lnaudshare cpaexp port_aud,i(code yr) j(id)
keep if id==0
cap drop rev
gen rev=1
save temp1.dta,replace
restore

preserve
use temp.dta,clear
rename audcode audcode1
save temp2.dta,replace
restore
preserve
merge m:1 audcode1 using temp2.dta
keep if _m==3 // 2646 company-years for audits
drop _m
rename eqrcode audcode0
rename eqr auditor0
rename lneqrshare lnaudshare0
rename lnaud1share lnaudshare1
rename lnaud2share lnaudshare2
rename cpaexp_eqr cpaexp0
rename port_eqr port_aud0
cap drop id
cap drop lnaudshare
reshape long audcode auditor lnaudshare cpaexp port_aud,i(code yr) j(id)

```

```

keep if id==1
cap drop rev
gen rev=0
save temp2.dta,replace
restore

preserve
use temp.dta,clear
rename audcode audcode2
save temp3.dta,replace
restore
preserve
merge m:1 audcode2 using temp3.dta
keep if _m==3 // 539 company-years for audits
drop _m
rename eqrcode audcode0
rename eqr auditor0
rename lneqrshare lnaudshare0
rename lnaud1share lnaudshare1
rename lnaud2share lnaudshare2
rename cpaexp_eqr cpaexp0
rename port_eqr port_aud0
cap drop id
cap drop lnaudshare
reshape long audcode auditor lnaudshare cpaexp port_aud,i(code yr) j(id)
keep if id==2
cap drop rev
gen rev=0
save temp3.dta,replace
restore

use temp1.dta,clear
append using temp2.dta
append using temp3.dta

preserve
keep code audcode auditor rev
duplicates drop
cap drop no
bysort code audcode: egen no=count(audcode)
tab no
gsort -no code audcode auditor
keep no code audcode auditor rev
format audcode %14.0g

```

```
export excel temp.xls,first(var) replace
keep if no>1
keep code audcode
duplicates drop
count
restore
```

```
gen lnaudshare_rev=lnaudshare*rev
```

```
save main1.dta,replace
```

```
global exp2 lnaudshare lnaudshare_rev rev
global ctrl2 lta lev_w roa_w lnsbs pre_acc_w soe boardsize inddirp dual dicw ften ci_o
cpaexp port_aud dcosign prior_audit
```

```
set more off
reghdfe $dep0 $exp2 $ctrl2, absorb(code audcode audfirm_id yr) vce(cluster code)
$out $dir4\result, $basic $add replace
reghdfe $dep1 $exp2 $ctrl2, absorb(code audcode audfirm_id yr) vce(cluster code)
$out $dir4\result, $basic $add
```